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## Project Narrative

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### Proposed 3 Lot Subdivision

Assessor's Map 33, Lot 44  
300 Pippin Orchard Road  
Cranston, RI

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#### Prepared For

Advanced Real Estate  
Development, LLC  
300 Pippin Orchard Road  
Cranston, RI 02921

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## 1.0 PROJECT NARRATIVE

### 1.1 SITE INFORMATION

City / Town:	Cranston, Rhode Island
Adjacent Roadways/Site Address:	300 Pippin Orchard Road
Lot(s) identification:	A.P. 33 Lot 44
Zoning District:	A80
Current Use:	Residential
Site Area:	7.0 Acres
FEMA Zone and Map:	Zone "X" (Panel 44007C0295G)

### 1.2 EXISTING IMPROVEMENTS AND SITE CONDITIONS

The existing property contains one single family residential structure located fronting Pippin Orchard Road, a state maintained right of way in Cranston RI. The residence is accessed from a half-circle paved driveway looping from this roadway. Other site improvements include a fenced pool area and a basketball court. The majority of the property is wooded with the exception of the area directly surrounding the residence and improvements which is maintained as lawn. The site is served by well water and an individual septic system. Overhead wires along Pippin Orchard Road provide electrical and communication services. No easements are known to exist.

### 1.3 PROTECTED FEATURES

Freshwater wetlands have been identified and delineated by a wetlands biologist at the rear of the site. This feature is associated with a 50-foot perimeter wetland. This site is subject to a wetlands permit through the RIDEM.

### 1.4 SITE TERRAIN AND SOILS

In general, the property slopes from the west end of the site and away from Pippin Orchard Road towards the freshwater wetlands at the east end of the site. The site accepts a small component of runoff from a small residential property to the northwest, but is otherwise isolated hydraulically. The site is relatively flat in the area of the existing residence and otherwise slopes uniformly towards the wetlands at an average 4%-6% slope. The soil types on site consist of WoB, WoA, and WhA (Woodbridge fine sandy loam) as designated by the USDA Natural Resource Conservation Service. These are generally type C/D hydrologic soils. Class IV soil evaluations performed on site revealed a groundwater table located approximately twenty to twenty-four (20-24) inches below existing grade. The soils below the topsoil were identified as soil category 8.

## **1.5 PROPOSED IMPROVEMENTS**

The owner intends develop the property into three single family lots, with one lot containing the existing structure and improvements. A total of two (2) new residences are to be constructed. A new 24-foot wide paved public road will provide access and frontage to these two residences. The majority of the properties will not be cleared of vegetation. A new sewer system will connect to the existing force main running along Pippin Orchard Road with stubs provided for the two new residences and the existing residence such that the existing septic system may be abandoned in the future. The new residences will be served by new private wells. Underground electrical and communication services will be run from the adjacent overhead lines.

A stormwater system consisting of catch basins, hydrodynamic separator, sand filter, and a detention basin will provide water quality and flow mitigation for the proposed improvements. Each new residential lot will be provided with a drain stub such that the roof downspouts may be connected to the drainage system. Alternate water quality systems may be substituted at time of residence construction in order to properly function with the desired structure locations and layouts.

## **1.6 SITE SUITABILITY**

The project site is suitable for the proposed use. The property contains more than sufficient developable land for the density proposed. Other previously approved subdivisions within the surrounding area have been equal or denser in configuration. The limits of clearing indicated for the development will preserve the character of the existing area, and maximize the retention of established vegetation. The narrow roadway proposed is suited to the low-impact nature of the development. No easements or variances are required for the development as proposed. The site drains positively in the existing conditions and the on-site soils are categorized as moderately well drained by the USDA NRCS with a very small percentage of hydric soils. While municipal water is not available along Pippin Orchard Road, the low density and groundwater quality allowed for the use of private drinking wells. The proposed municipal sewer eliminates the need for individual septic systems, and will allow for the abandonment of an existing septic system once it has reached the end of its life cycle. The configuration of the site allows for a stormwater system which meets or exceeds all standards of the state. There will be no negative environmental impacts as a result of the development.

## **1.7 EASEMENTS AND COVENANTS**

There are no known existing easements or covenants over the existing property. An easement will be provided to the City over the portions of the proposed drainage system located on the individual lots for emergency maintenance. The general maintenance of this portion of the drainage system will be the responsibility of a homeowner's association.

## 1.8 WAIVERS FROM CITY STANDARDS

The proposed roadway has been designed without sidewalks. Any sidewalks would see limited use as there are only two (2) proposed lots along the roadway. Additionally, there are no existing sidewalks along Pippin Orchard Road to which any new sidewalks could connect.

The proposed roadway has been designed with cape cod berms rather than standard precast concrete curbing. This is due to the limited use of the roadway and the fact there will be minimal stormwater directed down the proposed roadway which might require a taller curb.

## 2.0 PROPOSED STORMWATER CONSIDERATIONS

### 2.1 STORMWATER SYSTEM OBJECTIVES

The objectives of the project stormwater system are to accomplish the following:

- **Provide water quality treatment for stormwater runoff in accordance with the Rhode Island Stormwater Design and Installation Standards Manual, last revised March 2015 (RISDISM)**
- **Reduce or maintain the peak rate of runoff to all design points for the 1, 10 and 100-Year Type III 24-hour storm events**
- **Maintain the overall drainage patterns from the site to the extent practicable.**
- **Reduce peak runoff and 10-year total volume runoff to the abutting state roadway.**

### 2.2 COLD WATER CONSIDERATIONS

The downstream water (Furnace Hill Brook) is classified as a cold-water waterway by RIDEM. In order to ensure that retained stormwater does not have an opportunity to significantly heat up before discharge downstream, the detention basin has been designed with a low flow orifice at the very bottom of the basin. Through this orifice, the detention basin will be empty at the end of a 1-year 24-hour storm. During larger storm events, the basin will be empty within a few hours after the storm event.

In order to reduce the drain down time in the sand filter, and thereby reduce the chance of potentially heated water overflowing the media basin in back-to-back events, the basin depth has been minimized. Even using the conservative infiltration rate specified in the stormwater manual of 0.27 inches per hour, the 6-inch deep pool will be empty within 24 hours after a storm event. Additionally, the sand depth has been increased beyond that which is required for filtration in order to promote accelerated drain down.



### **3.0 LIMITATIONS AND SPECIAL TERMS AND CONDITIONS**

1. NE&C's evaluation was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same geographical area, and NE&C observed the degree of care and skill generally exercised by other consultants under similar circumstances and conditions. No warranty expressed or implied is made.
2. Any additional research conducted should be reviewed by Northeast Engineers & Consultants, Inc., such that the conclusions presented herein may be modified.
3. All observations documented in this report were performed under the existing conditions at the time of the assessment.
4. This report has been prepared on the behalf of and is for the exclusive use of the Client. This report and findings contained herein shall not, in whole or in part be disseminated or conveyed to any party, nor used by any other party in whole or in part, without the written consent of NE&C.



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**APPENDIX A    FIGURES**

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**SITE  
LOCATION**

300 Pippin Orchard Road

Alpine Country Club

Scale:	NTS	Date:	11SEP19	Designed By:	Drawn By:	Checked By:
Project Title:				Drawing Title:		
<p align="center"><b>PIPPIN ORCHARD SUBDIVISION PIPPIN ORCHARD RD. GRANSTON</b></p>				<p align="center"><b>LOCATION MAP</b></p>		
Issued for:		Drawing Number:		Project Number:		
<p align="center">PERMITTING</p>		<p align="center"><b>F-1</b></p>		<p align="center"><b>17121.0</b></p>		





Scale:	NTS	Date:	11SEP19	Designed By:	Drawn By:	Checked By:
Project Title:				Drawing Title:		
<p align="center"><b>PIPPIN ORCHARD SUBDIVISION</b> PIPPIN ORCHARD RD. CRANSTON</p>				<p align="center"><b>SOILS MAP</b></p>		
Issued for:		Drawing Number:		Project Number:		
<p align="center">PERMITTING</p>		<p align="center"><b>F-2</b></p>		<p align="center"><b>17121.0</b></p>		





Scale:	NTS	Date:	11SEP19	Designed By:	Drawn By:	Checked By:
Project Title:				Drawing Title:		
<p align="center"><b>PIPPIN ORCHARD SUBDIVISION</b>  <b>PIPPIN ORCHARD RD. CRANSTON</b></p>				<p align="center"><b>AERIAL PHOTOGRAPH</b></p>		
Issued for:		Drawing Number:		Project Number:		
<p align="center">PERMITTING</p>		<p align="center"><b>F-3</b></p>		<p align="center"><b>17121.0</b></p>		